A review is presented of the approach and activities of the United States Public Health Service to the problem of chronic respiratory diseases. The aim is to stimulate and support programs and activities at the community and state levels. Possibilities of dealing with emphysema and chronic bronchitis are discussed, and mass detection is considered, as well as intensive care and rehabilitation.

CHRONIC RESPIRATORY DISEASES—THE NEW LOOK IN THE PUBLIC HEALTH SERVICE

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A GREAT deal of progress has been made in health and medicine during the past few years. Vaccines and drugs have been developed to combat many of the old, destructive, and killing diseases. Vaccines now prevent polio and measles; chemotherapy cures a large percentage of tuberculosis patients; and artificial kidneys save lives. Open heart surgery, early cancer detection, and antibiotics all point the way for longer and more productive lives for our citizens. The still experimental heart pumps and organ transplants hold great promise in medical science.

In addition to the tremendous and far-reaching advances made in medicine during the past few years, impressive strides have been made in both the public and private sectors to clean up our whole environment. The Clean Air and Clean Water Acts and the Solid Waste Disposal Act indicate the great interest on the part of the lawmakers and, indeed, of our citizens, in making the country as free as possible from health-destroying pollutants. All of these advances constitute a "new look" for the scientists and health professionals of today.

Nonetheless, a great deal of work lies ahead and there is a long way to go. As old diseases are conquered, new ones, or disguised ones, rise up to take their places as killers and cripplers.

Chronic Respiratory Disease Problem

One group of these "new" diseases has assumed increasing importance in recent years. Today, chronic respiratory diseases constitute a health problem of potentially epidemic proportions, and there is every indication that the effect of these diseases may become devastating within a very few years.

Whether or not these chronic respiratory diseases are new or merely a presently popular diagnosis is a point for dispute, and will not be discussed at this time. It is enough to recognize that emphysema and chronic bronchitis are killing and crippling thousands of Americans yearly. Even though it is widely recognized that epidemiologic and statistical exploration are greatly needed to gain some concept of the extent of these diseases, the fact cannot be denied that in 1964, 20,208 people died from emphysema and chronic bronchitis and that an

estimated additional 40,000 people died with these two diseases as a contributory cause. Social Security disability pension records reveal that emphysema is now the second leading cause of disability for both men and women. Ten years ago, less than 5,000 people died from emphysema-bronchitis. If there can be a "new look" in diseases, then emphysema and chronic bronchitis are new.

The National Tuberculosis Association and other private groups have long recognized the great and growing importance of the chronic respiratory diseases in the national profile of death and disability and have paved the way for a growing attack against them. The Public Health Service is equally concerned about the chronic respiratory disease problem, and has begun operation of a new program to help prevent and control these diseases.

For many years, the Public Health Service has been conducting and supporting research into the causes of chronic respiratory diseases. The Division of Air Pollution, for instance, has supported sound investigational research in this area. Research has been conducted under the auspices of the National Heart Institute and, more recently, the National Institute for Allergy and Infectious Diseases, National Institutes of Health. Until recently, however, there was no single program in the Public Health Service specifically designated and charged with the responsibility for taking action to control chronic respiratory diseases.

Chronic Disease Control Activities

Spearheaded by the interest of the National Tuberculosis Association, American Public Health Association, certain state health departments, and other groups, the Public Health Service presented a proposal to Congress in the fall of 1965 to establish a full-fledged program in the National Center for Chronic Disease Control* to combat this threat to the health of thousands of Americans. The Chronic Respiratory Diseases Control Program† achieved official Branch status in February, 1966, and during the earliest months of its infancy, the program undertook sizable tasks.

It will be helpful at this time to describe briefly the functions and goals of the entire National Center for Chronic Disease Control and then to describe how the Chronic Respiratory Diseases Control Program fits into the overall plan. The center seeks to speed the translation of new medical knowledge into health services, and to create a vital link between the research scientist and the medical or health professional who is concerned with the chronically ill or disabled people in the community. To do this, the center conducts an extensive program of technical and financial assistance to states, health departments, voluntary health agencies, universities, hospitals, and other institutions concerned with providing care and services at the community level. Chronic disease is viewed as a continuum which progresses throughout a person's life. At various points, certain disease problem areas crop up. The center works to prevent these occurrences or to slow the progress of disease from mild to severe forms, and to minimize any associated disorders.

Programs are focused on several areas: the prenatal and perinatal states, primary prevention and health promotion, early detection and treatment, case control and care services, rehabilitation, and terminal care services.

Thus, most areas of chronic disease community programing are included and generally efforts are not limited by either disease category or age restrictions. To increase effectiveness, the

* Formerly the Division of Chronic Diseases.
† Formerly the Chronic Respiratory Disease Program.

center has programs in such areas as cancer control, heart disease control, neurological and sensory disease control, mental retardation control, gerontology, diabetes and arthritis, and three new programs: chronic respiratory diseases, smoking and health, and kidney diseases.

Generally, chronic respiratory diseases call to mind the middle-aged or elderly age groups, as indeed they should. However, the nation's youngsters who are more and more likely to begin smoking at early ages should not be neglected. In 1966, Mr. Sol Lifson of the National Tuberculosis Association spoke before a group of educators in Cleveland and said that 4,500 people in the United States begin smoking every day, most of them teenagers. He urged all health professions and school authorities to expand their efforts to point out the health hazards associated with smoking.

Lung cancer has been positively linked with smoking, and the same is true for chronic bronchitis. Authorities at the 1964 National Tuberculosis Association Annual Meeting estimated that the overall death rate for the United States would decrease by 40 per cent in one year, if cigarette smoking could be banished completely.

For emphysema, the most dramatic and devastating chronic respiratory disease, the association with smoking is not clear as yet. Most agree that this disease is caused by a variety of factors, among them smoking. It is agreed that smoking aggravates this disease and may play a significant part in causing it.

The new National Clearinghouse on Smoking and Health, for which there was a first-year appropriation of $2.5 million, is supporting a variety of projects aimed at determining the most effective way to encourage and motivate people to discontinue cigarette smoking. This is no small task, for despite the Surgeon General's Report on Smoking and Health, our citizens are taking up the smoking habit at an alarming rate and vast cultural patterns must be changed to curtail this habit. But for the first time, a resolute group including the NTA, the Public Health Service, the American Public Health Association, and several other major health and educational organizations have formed the National Interagency Council on Smoking and Health to fight this habit. Some progress has been made. It has been stated that the nation's medical profession has reduced its smoking population from 60 per cent to less than 30 per cent. Former Surgeon General Terry in a recent talk asked the medical profession to preach what it practices. If the general public had an equal understanding of the health hazards they, too, might be willing to make changes in their way of life.

New Program

To complement the Smoking and Health Program, the new Chronic Respiratory Diseases Control Program is primarily concerned with management and control of these diseases. For its first year, the program had an appropriation of $1 million.

The basic investigational research that the Public Health Service has carried out in the past is continuing. However, despite the steady expansion in research, the country has continued to see a parallel growth in the prevalence of these diseases, along with the mortality and disability caused by them.

Obviously some mechanism was needed to bridge the gap between research and the relief of the increasing number of patients suffering from the chronic respiratory diseases. In many ways, the problems inherent in the control, care, and rehabilitation of patients with emphysema-bronchitis are every bit as difficult as those surrounding smoking discouragement.

Yet, a great deal of knowledge is already available, and this knowledge and

these skills must be on hand for all those who need them. The new Chronic Respiratory Diseases Control Program is designed to bridge this gap and to stimulate the application of existing knowledge and technology.

The mandate from Congress is very clear: "to establish an identifiable unit of the chronic disease program to demonstrate methods of early detection of cases of emphysema and regimens of disease control and medical rehabilitation to a state of self support."

The new program aims for control by stimulating and initially supporting various programs and activities at the community and state level. These projects will put into practice the best knowledge for the control of emphysema-bronchitis, so that some evaluation of existing technology can be made. For the first few months of operation, a reverse approach was taken, that is, the severely disabled patients and those in respiratory failure became the primary targets for control.

The great need for rehabilitation is obvious when one considers the vast number of patients totally disabled by emphysema, disabled at a rate of 15,000 every year according to the Social Security Administration. If this trend continues, and there is every reason to suspect it will, our society will be composed of a larger and larger number of people, mostly men over 40, an extremely productive group, unable to pursue their regular occupations. Several studies have shown that rehabilitation can be of great help in alleviating the disabilities associated with advanced emphysema-bronchitis.

One study at the New York University Institute of Physical Medicine and Rehabilitation showed that about one-half of the patients who received intensive rehabilitation care were helped to some measure of self-sufficiency. Many of them were able to return to their regular jobs, or else could take on some less strenuous work. Without these services, the control patients in the study with equally advanced cases of emphysema made very little progress.

Nonetheless, the growing disability associated with respiratory diseases is viewed with pessimism by all too many practitioners. An initial goal of the new program is to reinforce the concept of respiratory rehabilitation. For rehabilitation helps, even though the way to reverse or halve the accompanying lung destruction is still unknown. To demonstrate the feasibility of rehabilitation, the program organized two model projects in rehabilitation and is supporting through grant mechanisms several other community programs in this area.

To inform medical practitioners and other health professionals of modern, up-to-date, and well-tested methods of rehabilitation, the program produced a one-hour, two-part motion picture on the application of physical medicine and rehabilitation for emphysema-bronchitis patients. The New York University Institute of Physical Medicine and Rehabilitation collaborated with the Public Health Service in issuing the motion picture. Both parts became available in January, 1966, and in the first half of the year an average of 50 groups requested permission to borrow the film every month. Judging by the number and content of inquiries from the general public following the announcement of the new PHS program, there is obviously a great demand from respiratory patients for relief.

Intensive respiratory care is another great need in American hospitals, and an area in which PHS is presently concentrating many efforts. A teaching hospital in the West with an intensive respiratory care unit which functions as a consultation service for the entire hospital staff has been able to save the lives of 80 per cent of the patients suffering respiratory failure. Only a few months previously, 80 per cent of the patients

had died. Obviously, intensive respiratory care must be available at the community level, where the patients are. Public Health Service demonstrations will help determine what kind of unit will best serve the needs in various situations. The program is presently supporting the operation of three "model" respiratory intensive care units.

To outline the principles of intensive care, arrangements have been made to produce a motion picture on the subject.

Although initial efforts are directed toward the severely disabled and acutely ill, the great majority of respiratory patients suffer mild to moderate degrees of disease. Before these patients can be helped, they will have to be found. The feasibility of mass case detection with a simple pulmonary function test, questionnaire, and chest x-ray has been fairly well established, but is not as well known as it should be. The Public Health Service supports several case-finding projects. Two of these projects, one in Buffalo, N. Y., and the other in Alabama, will screen a total of 27,000 people yearly. During one three-day period in January, 1,026 people were screened in a small Alabama town. Of these, almost 3 per cent had suspected tuberculosis, and another 17 per cent pathology, including cardiac abnormalities and chronic respiratory diseases. Case finding, of course, is most significant when coupled with treatment facilities and resources to care for the patients who are discovered.

Another project, this in Minneapolis, Minn., demonstrates proper diagnostic technics for physicians. This sophisticated diagnostic center has handled over 350 patients during a single year. The medical value of proper pulmonary function testing has been stressed in teaching seminars sponsored by the center.

The lack of adequate treatment and follow-up of patients with early chest disease is probably responsible for their progressive deterioration and ultimate invalidism. Various regimens for the treatment of such patients on an outpatient basis have yet to be adequately tested. The Chronic Respiratory Diseases Control Program supports two model outpatient clinics which administer up-to-date corrective services such as supervised long-term drug therapy, inhalation therapy, breathing exercises, systematic checkups, and home follow-up. These clinics also serve as community centers for the referral of patients by private physicians, and as resources for the education of medical and related health personnel.

Keeping the medical and related health professions informed of the newest and best methods for the detection, care, and rehabilitation of respiratory patients will assume increasing importance as new and better information is developed in the previously described projects. As primary efforts, two new publications are now available and have been mailed to most physicians in the United States. In June, 1965, the program sponsored the Eighth Aspen Conference on the Management of the Obstructive Lung Diseases and published conclusions of the meeting, a résumé of expert opinion on the principles for the care and treatment of respiratory patients. Another new publication describes the Chronic Respiratory Diseases Control Program. The motion picture on rehabilitation, "Chronic Bronchitis and Pulmonary Emphysema," will have a manual to accompany it which will be available within a short time. The manual contains the same basic information as the motion picture.

The Public Health Service also sponsored the Ninth and Tenth Aspen Conferences on Research in Emphysema in 1966 and 1967, and in the future will sponsor other conferences and seminars on the medical and public health aspects of chronic respiratory diseases. In these activities, as in other tasks, the Chronic Respiratory Diseases Control

Program will work closely with the National Tuberculosis Association and with other groups active in the field of chronic respiratory diseases.

However, national efforts to combat the chronic respiratory diseases will not be sufficient. Although the new PHS program represents a challenging new look for those who are alarmed by the growing threat of chronic respiratory diseases, no more than a brief sigh of satisfaction is justified. A tremendous amount of work remains undone and many new avenues are in need of exploration. To combat these diseases with any degree of success, the many thousands of people already afflicted with chronic bronchitis or emphysema deserve most attention, while a watchful eye is kept on the efforts of researchers and scientists looking for causes and remedies. All national efforts must come into focus at the community level, where services and help can be brought to the victims of chronic respiratory diseases. This is where a "new look" is most needed—in community services. Only in this area can a new outlook for respiratory patients be brought to fruition.

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